19. Write the syntax of union and explain with an example program.

20. Write a program using pointers to find the largest element in an array.

NOVEMBER/DECEMBER 2025

23UIM11 — PROGRAMMING IN C

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define constants in C with an example.
2. List any four language evaluation criteria.
3. Write the syntax of break statement.
4. Differentiate array and string.
5. Define the term recursion.
6. What is function prototype?
7. What is the main difference between structure and union?
8. How do you find the size of a structure?
9. How will you declare pointer variable?
10. List the various file opening modes.

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss the different categories of programming languages.

Or

(b) Demonstrate the basic structure of C programs.

12. (a) Write a C program to check whether a given number is even or odd using if-else.

Or

(b) Explain the looping statements in C with examples.

13. (a) Write a function in C to find factorial of a number using recursion and calculate $nC_r = \frac{n!}{(n-r)!\, r!}$

Or

(b) Describe the various types of functions with examples.

14. (a) Write a program to read and display details of 3 students using array of structures.

Or

(b) Explain how to define a structure and initialize is members.

15. (a) Explain array of pointers with an example program.

Or

(b) Write short notes on the file management function in C.

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SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the various types of expression in C.

17. Write a C program to implement a calculator using switch statement.

18. Write a C program to read two matrices and multiply it using undefined functions.